

STANDARD NOTE SPECIFICATION
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PATENT
Attorney Docket No. 031993-049

WHAT IS CLAIMED IS:

1. An antibody which is capable of binding to a cyclosporine related compound.
2. The antibody of claim 1 which recognizes a specific region of said cyclosporine related compound.
3. The antibody of claim 1 wherein said cyclosporine related compound is selected from the group consisting of cyclosporine A (CSA), cyclosporine G (CSG) and an isotopically modified cyclosporine.
4. The antibody of claim 1 wherein said cyclosporine related compound is a cyclosporine metabolite.
5. The antibody of claim 1 which has a greater affinity for CSA than a metabolite of CSA.
6. The antibody of claim 1 which has a greater affinity for a metabolite of CSA than unmetabolized CSA.
7. The antibody of claim 1 which is a polyclonal antibody.
8. The antibody of claim 1 which is a monoclonal antibody.
9. The antibody of claim 1 which exhibits selectivity for AMI or AM9.

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10. The antibody of claim 1 which is selected from the group consisting of CSA-2G9, CSA-1H6, AM1-7F5, AM1-3B1, AM1-2E10, AM1-3C1, AM19-1-5D2, AM19-1-4E8, AM19-1-5B2, AM1-2E10, AM19-9-5A6, AM9-1-6D4, AM9-1-7D2, AM9-9-11G9, AM9-9-6C3, AM1-3A6, AM19-1-7E12, AM9-1-2A11, AM19-9-1E11, AM19-9-1D8, AM19-9-2G9, AM9-9-11H11, AM9-9-4F5 and AM9-1-4D6.
11. A hybridoma cell line which produces the antibody of claim 1.
12. A method for producing an antibody which is capable of recognizing a specific region of a cyclosporine related compound comprising: a) administering an immunogen comprising a cyclosporine related compound, a linker arm molecule and a protein carrier to an animal so as to effect a specific immunogenic response to the cyclosporine related compound; b) recovering an antibody to said cyclosporine related compound from said animal; and c) identifying the antibody binding region by comparing the reactivity of the antibody to a first cyclosporine related compound to the reactivity of the antibody to a second cyclosporine related compound.
13. The method of claim 12 wherein said linker arm molecule is divinyl sulfone.
14. The method of claim 12 wherein said protein carrier is selected from the group consisting of keyhole limpet hemocyanin and human serum albumin.

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15. The method of claim 12 wherein said step of recovering said antibody comprises recovering at least one antibody producing cell from said animal, immortalizing said antibody producing cell, and, optionally, isolating a monoclonal antibody from said immortalized antibody producing cell.

16. The method of claim 12 wherein said cyclosporine related compound is linked to the carrier at amino acid residue 1 or 9.

17. The method of claim 12 wherein said animal is a mouse, rat, rabbit, chicken, guinea pig, donkey, pig, goat, sheep cow, horse, dog, cat or monkey.

18. An antibody produced by the method of claim 12.

19. An antibody produced by the method of claim 15.

20. An immunoassay method for measuring the level of a cyclosporine related compound in a mammal, comprising: a) incubating a biological sample from said mammal with an antibody according to claim 1; and b) measuring the binding of said cyclosporine related compound to said antibody.

21. The immunoassay of claim 20 wherein said antibody recognizes a specific region of said cyclosporine related compound.

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22. The immunoassay of claim 20 wherein said cyclosporine related compound is selected from the group consisting of cyclosporine A (CSA), cyclosporine G (CSG) and an isotopically modified cyclosporine.

23. The immunoassay of claim 20 wherein said cyclosporine related compound is a cyclosporine metabolite.

24. The immunoassay of claim 20 wherein said antibody has a greater affinity for CSA than a metabolite of CSA.

25. The immunoassay of claim 20 wherein said antibody has a greater affinity for a metabolite of CSA than unmetabolized CSA.

26. The immunoassay of claim 20 wherein said antibody is a polyclonal antibody.

27. The immunoassay of claim 20 wherein said antibody is a monoclonal antibody.

28. The immunoassay of claim 20 wherein said antibody exhibits selectivity for AMI or AM9.

29. The immunoassay of claim 20 wherein said antibody is selected from the group consisting of CSA-2G9, CSA-1H6, AMI-7F5, AMI-3B1, AMI-2E10, AMI-3C1, AM19-1-5D2, AM19-1-4E8, AM19-1-5B2, AM1-2E10, AM19-9-5A6, AM9-1-6D4, AM9-1-7D2, AM9-9-11G9, AM9-9-6C3, AMI-3A6, AM19-1-7E12, AM9-1-2A11,

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AM19-9-1E11, AM19-9-1D8, AM19-9-2G9, AM9-9-11H11, AM9-9-4F5
and AM9-1-4D6.

30. An immunoassay kit for measuring the level of a cyclosporine related compound in a sample, said kit comprising an antibody according to claim 1.

31. The kit of claim 30 wherein said sample is a biological sample.

32. A method for determining the amount of a particular cyclosporine related compound in a sample, comprising: a) contacting said sample with a first antibody according to claim 1; b) contacting said sample with a second antibody according to claim 1; and c) determining the amount of said particular cyclosporine related compound bound to said second antibody.

33. The method of claim 32 wherein said particular cyclosporine related compound is CSA, said first antibody exhibits selectivity for a metabolite of CSA and said second antibody exhibits selectivity for CSA.

34. The method of claim 32 wherein said particular cyclosporine related compound is a metabolite of CSA, said first antibody exhibits selectivity for CSA and said second antibody exhibits selectivity for a metabolite of CSA.

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35. The method of claim 32 wherein said sample is a biological sample.